Mobile Incident Command Center

# Snare Sentinel Monitoring Procedure

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Mobile Incident Command Center

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## Foreword

Oil that was released into the environment from the Deepwater Horizon/Mississippi Canyon 252 (MC 252) incident is expected to initially remain floating on the surface of the water based on its specific gravity. However, several mechanisms exists whereby oil could potentially be mobilized below the surface and remain either within the water-column (neutrally buoyant; referred to as "submerged oil") or settle to the bottom (negatively buoyant; referred to as "sunken oil") (See Annex 1 for a schematic of oil and area definitions). The presence of these types of oil could be caused by the application of dispersants or entrainment of sediment into un-dispersed floating oil. The latter situation, if occurring, would be expected to be more likely to occur in areas with high suspended sediment loads (e.g., Mississippi River outflow or shoreline sediments). If sufficient amounts of sediment are entrained via these mechanisms, floating oil could become neutrally buoyant (submerged oil) or negatively buoyant (sunken oil).

In order to monitor regions that may contain submerged and sunken oil, snare sentinels or pom-poms will be used. Snare sentinels and pom-poms are passive monitoring devices made of polypropylene oleophilic absorbent material attached to polypropylene rope secured with an anchor (with anchor chain) and a buoy. The snare sentinel sits vertically in the water column allowing it to trap submerged or sunken oil that may be migrating below the water surface.

## 1 Introduction

The Mobile Incident Command Post (Mobile ICP) has prepared this Snare Sentinel Monitoring Procedure to evaluate concerns that submerged and sunken oil may be present in near shore or offshore water. This procedure is designed to establish a fenceline of snare sentinels to determine the possible presence of submerged and sunken oil in the water column. The purpose of this procedure is to identify the presence of submerged and sunken oil that could (1) threaten shallow sub-tidal habitats and/or (2) result in the oiling of clean, or previously cleaned, shoreline environments.

This procedure involves the placement of 148 fixed "sentinel stations" at designated locations along the shorelines of Florida, Alabama, and Mississippi. A "sentinel station" consists of a submerged line that is weighted at the bottom (by an anchor with anchor chain) and supported by a buoy at the top. Oil sorbent materials (in the form of snares or pom-poms) are connected to the line at approximately 3-foot intervals (smaller intervals may be appropriate in shallow water). The sentinel stations will be placed along the seaward side of the second sand bar or seaward of the identified sandbar if only 1 sandbar exists, as determined by visual observation and sonar. The second sand bar is expected to be near the 25-foot depth contour. The seaward side of the second sand bar was selected as the best location to

identify submerged oil before it reaches the sand bar system and before it can impact shoreline environments.

The snare sentinels will be retrieved on a daily basis for inspection. If the visual inspection reveals the presence of oil, or suspected oil, Operations will notify the Situations Hotline to arrange for the collection of representative samples of snare materials, water, and sediment (if necessary). If no oil is observed, snare sentinels will be re-deployed in the same location.

It is anticipated that the procedure will be implemented for a period of two weeks, at which time the results will be used to evaluate the need to continue and/or modify this procedure.

## 2 Scope

The scope of work consists of:

- Deploying snare sentinels at locations (shown on attached Figure 1) along the shoreline.
  - Snare sentinels will placed at approximately 1 mile intervals in areas of concern selected by States or the Shoreline Cleanup Assessment Team (SCAT).
  - Snare sentinels will placed at approximately 5 mile intervals in other areas.
- Retrieving sentinels from each locations every 24 hours, if possible.
- Inspecting snares/pompoms for the presence of oil.
  - If oil is observed, the onboard crew will be reported to the Situations Hotline at 251-445-3333.
  - If no oil is observed, snare sentinels will be re-deployed in the same location.
- Recording field observations using the attached Snare Sentinel Field Observation Form provided in Annex 2.
  - Field observations must be reported to Mobile IC on a daily basis.
  - **If visual evidence of oil is observed, a Situation Team Reporting Sheet**, provided in Annex 3**, must be completed.**

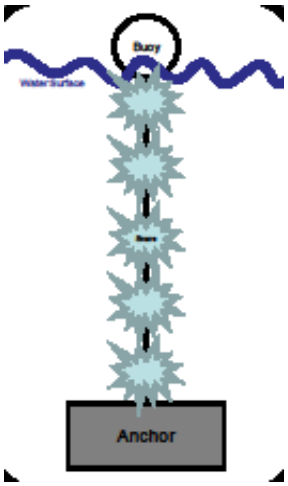
## 3 Sentinel Deployment

All work associated with this procedure should be conducted in accordance with the Best Management Practices (BMPs) recommended by the National Oceanic and Atmospheric Administration (NOAA) that are summarized in Section 5.

Snare sentinel raw materials (polypropylene line, snares with zip ties, anchors with chains; and a buoy; see description below) will be provided by the Operations Section for assembly at the staging area or onboard.

Once the boat reaches each determined deployment point (i.e., seaward side of second sand bar or seaward of the identified sandbar if only 1 sandbar exists), a single sentinel will be lowered into the water until the anchor reaches the sea floor.

Each snare sentinel will be configured using (1) an anchor and anchor chain, (2) a thick and buoyant polypropylene anchor rope (cut to size at each location to minimize risk of entanglement), and (3) snares/pom-poms attached with zip ties every 3 feet spanning the entire length. The bottom-most snare/pom-pom will be attached to the anchor chain and the upper-most snare will be placed just below the buoy. Each sentinel should be properly marked with an ID Tag. After the line is cut to minimize slack, the buoy will be attached and the snare deployed.




After each sentinel is deployed, the following must be recorded:

- Date and Time
- Sentinel ID
- GPS coordinates (recorded in decimal degrees)
- Presence of surface oiling (do not deploy snare sentinel if surface oil is present)
- Any problems with deployment
- Photos (if appropriate)

**Snare sentinels will be retrieved from each location every 24 hours, if possible.**

It is important to note that a **sentinel should NOT be deployed (or removed) in water that is oiled at the surface.** If the snares come into contact with oiled surface water, the oil will adhere to the snares, misrepresenting the presence of oil in the water column. Therefore, it is appropriate to move to another deployment location that does not show signs of surface oiling.

Equipment and supplies needed may include, but are not limited to, the following:

- Snare Sentinels (or pompom sentinels)

- Sentinel ID tags
- Zip-ties
- Nitrile Gloves
- Write-in-the-Rain Field Logbook
- GPS
- Camera
- Protocol/Guides
- Maps
- Coolers
- Ice/Blue Ice
- Pens/Pencils/Sharpies
- Absorbent Pads
- Extra Snares or Pom-poms
- Extra Rope
- Extra Buoys
- Ziploc Freezer Bags (to collect individual oiled snares)
- Plastic Garbage Bags (to collect oily materials such as rope)
- Plastic Sheeting (to avoid tracking oil onto Boat Deck)
- Clear Packaging Tape
- Scissors/Knife (to cut zip ties and rope)
- Extra Batteries
- Safety Equipment
- Satellite Phone
- Sunscreen

Each field crew **member** should have the following PPE for field work:

- Hard hat (for staging areas)
- Steel-toed boots (for staging areas)
- Safety glasses (sunglasses are fine as long as they have side shields)
- Personal Flotation Device

## 4 Sentinel Inspection and Documentation

Upon retrieval, each snare will be inspected for the presence of oil by the field crew.

Complete the **Snare Sentinel Field Observation Form** (in Annex 2) and note the following:

- Vessel Name
- Date, Time, and General Location (State, Bay)
- GPS Coordinates (using decimal degrees)
- Date and Time (use 24-hour military format)
- Sentinel ID and Depth Below surface
- Evidence of oil in snares
- Depth of impacted snares

**Determine Evidence of Oil.** In most cases, evidence of oil on snares will be visible; however, there is a possibility that snares near the bottom of the sentinel line may potentially entrain mud due to the proximity of the substrate and current or organism activity near the snare sentinel.

If the snare is covered with mud or other debris, then the following criteria will be evaluated to determine the nature of the material observed on the snare:

- Smell: Is there olfactory evidence of hydrocarbons on or near the snares?

- Touch: With a nitrile gloved hand, run ringers over snare to see if the substance comes off. If it comes off easily, then its mud. If the substance adheres to the snare (or nitrile glove) as a residue, or feels oily, it will be considered to be potential oil.

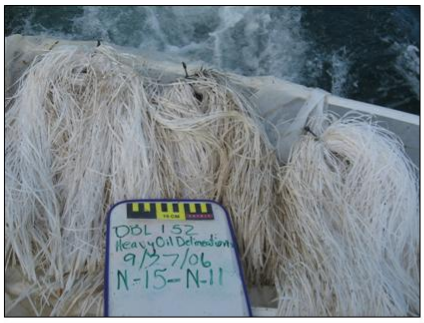
- Color: If the substance is light-to-medium grey, then it's mud. Black, brown, amber, or orange color will be considered potential oil.

If no evidence of potential oil is observed, then the snare sentinel will be re-deployed at their original location.

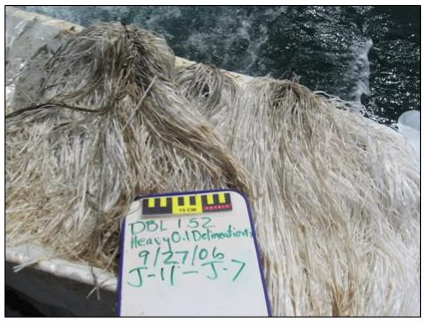
If potential oil is observed, then:

(1) The levels of impact will be classified (i.e., very light, light, moderate, or heavy) for each snare (at each depth) using the attached photos as a guideline. Note depth of each impacted snare.

**REPRESENTATIVE OILING LEVELS**




Very Light




Light


Moderate


Heavy

(2) **If visual evidence of oil is observed, the s**urvey team will contact the **Situation Unit Hot Line at 251-445-3333. Provide sufficient information for the** Situation Unit to complete the Situation Team Reporting Sheet, provided in Annex 3**.**

(3) The oiled snares will be removed from the sentinel line.

(4) The most impacted snare (if any) from each snare line will be placed in a plastic freezer bag, labeled, and retained for further visual evaluation onshore.

(5) The remainder of the oiled snares (less oily than the one retained), or the entire snare line if grossly impacted, will be placed in a plastic garbage bag.

(6) The oiled snares will be replaced with clean ones prior to redeployment.

**RESULTS OF VISUAL INSPECTIONS MUST BE REPORTED TO MOBILE IC ON A DAILY BASIS.**

## 5 Best Management Practices for Snare Sentinels

All work associated with this procedure should be conducted in accordance with the following Best Management Practices recommended by NOAA:

- All sentinel snares will be securely attached to the bottom substrate with an anchor. Areas of high current or tidal flow should use additional anchors to secure the snare line as needed.
- The length of the lines will be minimized to account for water depth, tidal fluctuations, and wave action to minimize the slack in the rope.
- Snares should be checked every 24 hours to ensure they remain properly anchored and verify that there are no animals are entangled in them.
- Sentinel snares should be retrieved prior to the arrival of tropical storms or hurricanes.
- Any entangled sea turtles, marine mammals, or birds must be immediately reported to the Wildlife Hotline at (866-557-1401).
- All sea turtles and dolphins sighted swimming with or entangled in any type of line or snares must also be immediately reported.
- Use a stiff anchor rope that has a lesser likelihood of looping to reduce the risk of entanglement when interactions with sea turtles and dolphins occur.
- Watch for and avoid collisions with wildlife and report all distressed or dead birds/marine mammals/turtle sightings/whale sharks/rays to the Wildlife Hotline (866-557-1401).
- Retrieve injured/dead/oiled sea turtles using the sea turtle At-Sea Retrieval Protocol (in Annex 4).
- Following coordination with the Wildlife Hotline, please notify NOAA of any “takes”, and notification of those conservation measures that were implemented, and provide an explanation for any measures that could not be implemented. Any lost snares should also be reported to NOAA. "Take" is defined by the Endangered Species Act as "to harass,

harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

## 6 Waste Management

All oiled snares (except the worst-case oiled snare that is retained in a labeled freezer bag) need to be placed in a garbage bag. All other disposable materials (gloves, used rope) should also be placed in a garbage bag. When demobilizing for the day, bagged oiled snares and other waste materials must be properly disposed of.

**Figure 1: Snare Sentinel Monitoring Locations**


| ID | X | Y |
|---|---|---|
| 1 | -89.568 | 30.170 |
| 2 | -89.487 | 30.179 |
| 3 | -89.405 | 30.183 |
| 4 | -89.323 | 30.196 |
| 5 | -89.240 | 30.209 |
| 6 | -89.158 | 30.223 |
| 7 | -89.142 | 30.221 |
| 8 | -89.125 | 30.219 |
| 9 | -89.111 | 30.212 |
| 10 | -89.097 | 30.204 |
| 11 | -89.080 | 30.203 |
| 12 | -89.064 | 30.203 |
| 13 | -89.047 | 30.204 |
| 14 | -89.030 | 30.204 |
| 15 | -89.013 | 30.204 |
| 16 | -88.997 | 30.204 |
| 17 | -88.918 | 30.216 |
| 18 | -88.902 | 30.220 |
| 19 | -88.887 | 30.227 |
| 20 | -88.873 | 30.235 |

| ID | X | Y |
|---|---|---|
| 21 | -88.857 | 30.236 |
| 22 | -88.840 | 30.237 |
| 23 | -88.823 | 30.237 |
| 24 | -88.807 | 30.238 |
| 25 | -88.790 | 30.238 |
| 26 | -88.773 | 30.239 |
| 27 | -88.756 | 30.240 |
| 28 | -88.677 | 30.227 |
| 29 | -88.595 | 30.215 |
| 30 | -88.512 | 30.209 |
| 31 | -88.430 | 30.199 |
| 32 | -88.348 | 30.214 |
| 33 | -88.266 | 30.227 |
| 34 | -88.184 | 30.241 |
| 35 | -88.168 | 30.242 |
| 36 | -88.151 | 30.242 |
| 37 | -88.134 | 30.243 |
| 38 | -88.117 | 30.242 |
| 39 | -88.101 | 30.239 |
| 40 | -88.085 | 30.237 |

| ID | X | Y |
|---|---|---|
| 41 | -88.068 | 30.233 |
| 42 | -88.052 | 30.230 |
| 43 | -88.020 | 30.222 |
| 44 | -88.036 | 30.226 |
| 45 | -87.936 | 30.222 |
| 46 | -87.853 | 30.223 |
| 47 | -87.770 | 30.229 |
| 48 | -87.753 | 30.231 |
| 49 | -87.737 | 30.234 |
| 50 | -87.720 | 30.236 |
| 51 | -87.704 | 30.238 |
| 52 | -87.687 | 30.241 |
| 53 | -87.671 | 30.243 |
| 54 | -87.654 | 30.245 |
| 55 | -87.638 | 30.247 |
| 56 | -87.621 | 30.250 |
| 57 | -87.605 | 30.254 |
| 58 | -87.589 | 30.257 |
| 59 | -87.572 | 30.260 |
| 60 | -87.556 | 30.264 |

| ID | X | Y |
|---|---|---|
| 61 | -87.540 | 30.267 |
| 62 | -87.524 | 30.270 |
| 63 | -87.442 | 30.287 |
| 64 | -87.426 | 30.290 |
| 65 | -87.410 | 30.294 |
| 66 | -87.393 | 30.297 |
| 67 | -87.377 | 30.300 |
| 68 | -87.361 | 30.304 |
| 69 | -87.344 | 30.307 |
| 70 | -87.328 | 30.310 |
| 71 | -87.312 | 30.312 |
| 72 | -87.295 | 30.313 |
| 73 | -87.278 | 30.314 |

| ID | X | Y |
|---|---|---|
| 74 | -87.195 | 30.324 |
| 75 | -87.179 | 30.326 |
| 76 | -87.162 | 30.328 |
| 77 | -87.146 | 30.331 |
| 78 | -87.129 | 30.333 |
| 79 | -87.113 | 30.335 |
| 80 | -87.030 | 30.347 |
| 81 | -87.014 | 30.350 |
| 82 | -86.997 | 30.352 |
| 83 | -86.981 | 30.355 |
| 84 | -86.964 | 30.358 |
| 85 | -86.948 | 30.360 |
| 86 | -86.866 | 30.374 |
| 87 | -86.849 | 30.376 |
| 88 | -86.832 | 30.379 |
| 89 | -86.816 | 30.381 |
| 90 | -86.799 | 30.383 |
| 91 | -86.783 | 30.385 |
| 92 | -86.700 | 30.391 |
| 93 | -86.616 | 30.392 |
| 94 | -86.599 | 30.391 |

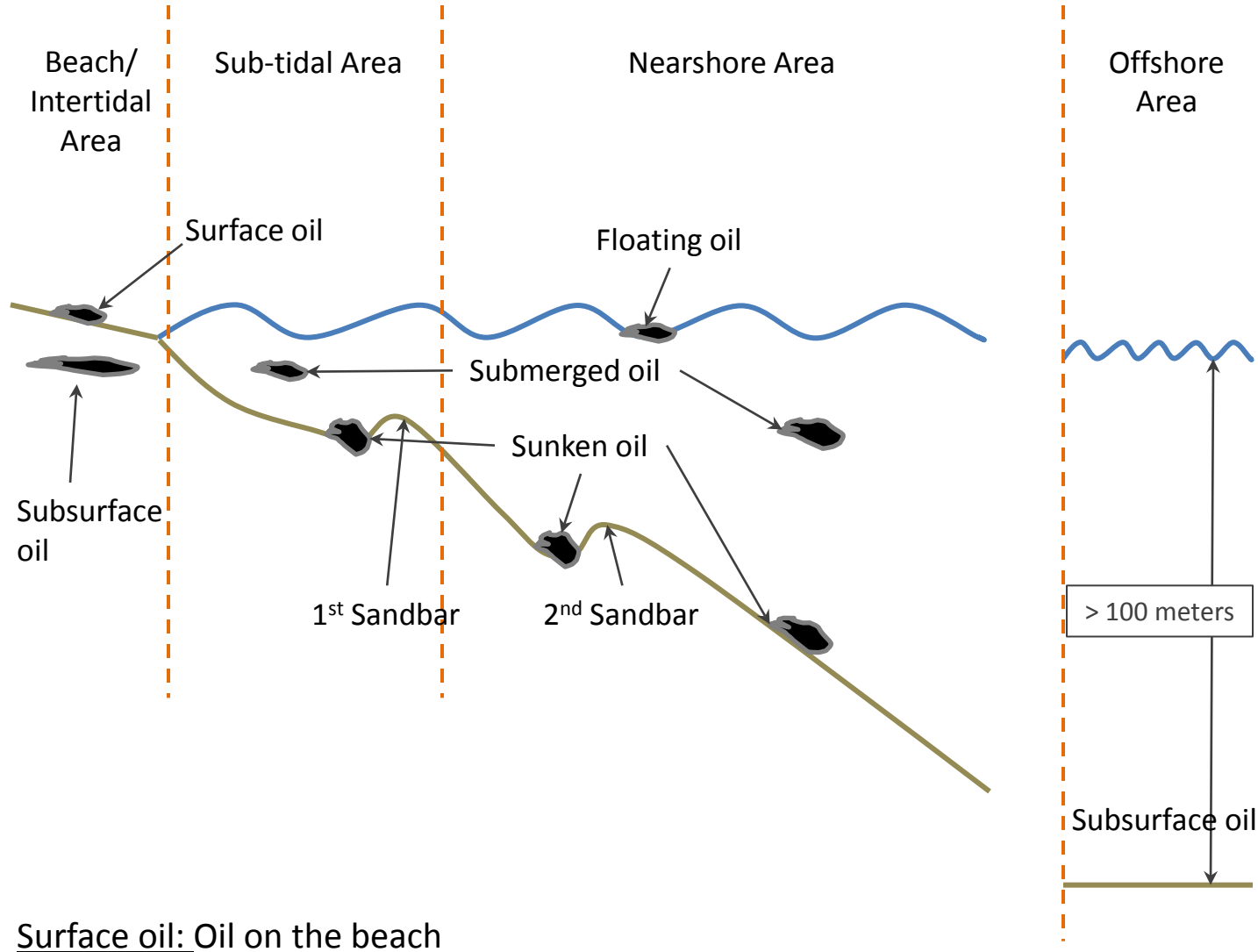
| ID | X | Y |
|---|---|---|
| 95 | -86.583 | 30.389 |
| 96 | -86.566 | 30.387 |
| 97 | -86.533 | 30.383 |
| 98 | -86.549 | 30.385 |
| 99 | -86.449 | 30.376 |
| 100 | -86.433 | 30.375 |
| 101 | -86.416 | 30.374 |
| 102 | -86.399 | 30.373 |
| 103 | -86.383 | 30.372 |
| 104 | -86.366 | 30.371 |
| 105 | -86.285 | 30.354 |
| 106 | -86.204 | 30.333 |
| 107 | -86.188 | 30.329 |
| 108 | -86.172 | 30.325 |
| 109 | -86.157 | 30.320 |
| 110 | -86.141 | 30.314 |
| 111 | -86.125 | 30.309 |
| 112 | -86.048 | 30.283 |
| 113 | -85.972 | 30.253 |
| 114 | -85.957 | 30.246 |
| 115 | -85.943 | 30.238 |

| ID | X | Y |
|---|---|---|
| 116 | -85.928 | 30.231 |
| 117 | -85.914 | 30.224 |
| 118 | -85.899 | 30.217 |
| 119 | -85.885 | 30.209 |
| 120 | -85.870 | 30.202 |
| 121 | -85.856 | 30.195 |
| 122 | -85.841 | 30.188 |
| 123 | -85.827 | 30.180 |
| 124 | -85.759 | 30.138 |
| 125 | -85.747 | 30.128 |
| 126 | -85.735 | 30.118 |
| 127 | -85.722 | 30.109 |
| 128 | -85.709 | 30.100 |
| 129 | -85.695 | 30.091 |
| 130 | -85.620 | 30.060 |
| 131 | -85.561 | 30.013 |
| 132 | -85.499 | 29.965 |
| 133 | -85.449 | 29.908 |
| 134 | -85.418 | 29.843 |
| 135 | -85.408 | 29.771 |
| 136 | -85.384 | 29.702 |

| ID | X | Y |
|---|---|---|
| 137 | -85.326 | 29.662 |
| 138 | -85.244 | 29.674 |
| 139 | -85.169 | 29.647 |
| 140 | -85.099 | 29.609 |
| 141 | -85.024 | 29.594 |
| 142 | -84.945 | 29.616 |
| 143 | -84.870 | 29.647 |
| 144 | -84.795 | 29.678 |
| 145 | -84.725 | 29.717 |
| 146 | -84.655 | 29.756 |
| 147 | -84.585 | 29.795 |
| 148 | -84.513 | 29.832 |

## Annex 1: Oil and Area Definitions

# Oil and Area Definitions




Surface oil: Oil on the beach
Subsurface oil: Oil beneath the beach surface or in water's greater than 100 meters deep
Floating oil: Oil floating at or near the water's surface
Submerged oil: Oil within the water column
Sunken oil: Oil on the sea floor bottom and/or mixed in with bottom sediments

Beach/Intertidal Area: Beach above mean low water
Sub-tidal Area: Mean low water to approximately the outer edge of first sandbar
Nearshore Area: Seaward from approximately the outer edge of first sandbar
Offshore Area: Generally waters deeper than 100 meters

## Annex 2: Snare Sentinel Field Observation Form

# SNARE SENTINEL
# FIELD OBSERVATION FORM

| | | |
|---|---|---|
| **Vessel Name:** | | **Date:** |
| **Observer Name:** | | **Time:** |
| **General Location (State):** | | |
| **Sentinal ID Number:** **(#1 to #148)** | | **Total Depth (feet):** |
| **GPS Coordinates** **(use decimal degrees)** | **Latitude** | **Longitude** |
| **Presence of Oil on Snare Line (Yes or No)?** **If NO — then form is complete** | | |

## IF OIL OBSERVED

**Record Depth and Oiling Level of Each Snare – Take Photograph – Call Situations Hotline**

| Snare Number (top to bottom) | Depth | Note Oiling Level (very light; light; moderate; or heavy) | Other Observations (add photo number) |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |

Problems Encountered? Oil at Surface?

**REPORT PRESENCE OF OIL TO SITUATIONS HOTLINE: 251-445-3333**
**REPORT PRESENCE OF OILED OR ENTANGLED WILDLIFE TO WILDLIFE HOTLINE: 866-557-1401**

## Annex 3: Situation Team Reporting Sheet

**Situation Team Reporting Sheet** **Deepwater Horizon–Mobile _____**

| | | | | | |
|---|---|---|---|---|---|
| **a**. Date of Call: | | **b** Time of Call: | | **c**. Call Taker: | |
| **d**. Reporter Name: | | | | e. Reporter Phone# | |
| **f**. If vessel reporting, insert name of vessel, Captain's Name and phone number | | | | | |
| **g**. Geographic Location: | | | | | |
| **h.** GPS Coordinates: | North | | West | | |
| **i**. What are the coordinate units? | ☐Decimal degrees ☐Degrees decimal minutes ☐Degrees minutes seconds | | | | |
| **j.** City: | | **k**. County: | | **l**. State: | |

**m**. Type: (Check all that apply)

**Where is the oil located?**
☐ Oil Onshore ☐ Oil Offshore ☐ Oil Nearshore

**Which of the following form of oil do you see?**
☐ Tarball ☐ Mousse ☐ Oily Mat ☐Oiled Debris ☐ Floating Oiled Vegetation

☐Oil Sheen {☐ Heavy Sheen ☐ Light Sheen (Length and width of sheen)_____}

☐Submerged or Benthic Oil (Oil on Seafloor)

**What is the color of the oil?** _____

**Is there a smell?**
☐ Heavy Smell ☐ Medium Smell ☐ Light Smell

**Were pictures taken of the oil?** _____ (If yes, please have them email to Call Center email.)

**Can you estimate currents or direction oil seemed to be drifting?** _____

Other
☐ Public Info – JIC ☐ Public ☐ Information ☐ Debris ☐ Boom ☐ Other ☐ Vessel Decon

**n**. Description:

## Annex 4: Sea Turtle At-Sea Retrieval Protocol

# SEA TURTLE AT-SEA RETRIEVAL PROTOCOL

**ONLY LIVE OILED, INJURED, AND DEAD SEA TURTLES SHOULD BE RETRIEVED**. If the sea turtle attempts to avoid capture, **DO NOT PURSUE**, only retrieve turtles that can be easily picked up and taken aboard. An oiled turtle has the best chance of survival if we can get it to shore! Turtles can be netted at the surface using dipnets or other hoists if available. Do not attempt to net actively swimming medium or large turtles, as they can pull the dipnet away from you and be permanently trapped in the net. Smaller turtles may be carefully lifted on board by holding their shell. Once onboard, sea turtles should be carefully handled and kept shaded. Call the wildlife hotline **IMMEDIATELY (866-557-1401)** and we will make arrangements to collect the turtle from you or meet you on shore.

**BE SURE TO USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE)**

(Gloves, Tyvek suits, boots, and goggles if necessary)
Sea Turtle Retrieval Kit (1 per boat) Includes:
large dip net, large plastic bin, large cotton towel, and PPE (gloves, tyvek suit, goggles)

1. Bring the turtle on board (dipnets are useful for small to medium turtles). Try not to pick up turtles by their flippers, but rather, lift them by grasping both sides of the shell. If the turtle attempts to evade capture, do not pursue it, only retrieve turtles that can be easily picked up and taken on board. When handling turtles, be aware of the head and flippers – they will bite and have powerful flippers with claws.

2. Contact the **Wildlife Hotline (866-557-1401)** or your supervisor to report the turtle to the Wildlife Branch as quickly as possible. Let them know that you have it on board so they can arrange transportation from your boat to the rehabilitation center.

3. Determine position at sea (latitude/longitude coordinates as DD.DDDD).

4. Get the towel wet and put it in the bottom of the transport crate. Place the turtle on top of the towel. Put the crate with the turtle inside in the shade. Do not add water to the crate, the turtle should be on a wet towel, but not in water. **DO NOT WASH THE TURTLE** – let experienced rehabilitators do this properly.

5. If the turtle appears to be dead, follow the same process but roll the towel up to raise the hind end a few inches higher than the head. Keep the crate in the shade. (Note: live turtles may appear comatose for up to 24 hours)